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SEWAGE AND WATER WORKS CONSTRUCTION

Federal Water Pollution Control Administration
Washington, D. C.

1968

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U.S. DEPARTMENT OF THE INTERIOR
Federal Water Pollution Control Administration
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Related Publications

Sewage Treatment Works Contract Awards, 1952–1957
Public Health Service Publication No. 633

Sewage and Water Works Construction, 1957
Public Health Service Publication No. 608

Sewage and Water Works Construction, 1958
Public Health Service Publication No. 673

Sewage and Water Works Construction, 1959 edition
Public Health Service Publication No. 758

Sewage and Water Works Construction, 1960 edition
Public Health Service Publication No. 758

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Public Health Service Publication No. 758

Sewage and Water Works Construction, 1962 edition
Public Health Service Publication No. 758

Sewage and Water Works Construction, 1963 edition
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PREFACE

This annual report of "Sewage and Water Works Construction 1968" is published as one part of the basic data program required and authorized in Public Law 660 (as amended by the Federal Water Pollution Control Act Amendments of 1961—(PL 87–88), and by the Water Quality Act of 1965—(PL 89–234).

The data published herein provide a continuing and ready source of information and reference as to how successfully the national needs in municipal water supply and pollution control are being met through construction of the necessary physical facilities.

This publication also establishes important year-to-year cost trends in the national economic picture in the three types of public works construction involved. Such data are valuable not only to Federal, State and local government authorities and officials responsible for providing water supplies and for controlling pollution, but are also valuable to the building and contracting trades and to the engineering profession.

Effective January 1, 1969, this Administration will no longer include in this publication series data on waterworks.

This report was prepared by Kenneth H. Jenkins, Consultant Statistician, and Florence G. Simmons, Statistical Assistant, under the direction of Jesse L. Lewis, Chief, Data and Information Services Section; Pollution Surveillance Branch; Federal Water Pollution Control Administration.

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SECTION 1—GENERAL PRESENTATION OF SEWAGE AND WATERWORKS CONTRACT AWARDS

A. CONTRACT AWARDS—1968

Contracts awarded in the sewage and waterworks field in calendar year 1968 amounted to almost $2.4 billion, broken down as shown below in millions.

Sewage treatment	866.8
Collecting sewers	582.5
Waterworks	913.1
Total	2,362.4

Sewage treatment contracts were 45 percent over 1967 and at the highest level of record beginning in 1952. Contracts for collecting sewers were 30 percent above last year and also a record high. Waterworks contracts were 13 percent below 1967 but still the second highest on record.

The total value of all three categories is about 26 percent above 1967 and is the highest figure on record. On a constant dollar basis (1957–59), the increase from 1967 was about 10 percent.

Each of the above totals is based upon an identified and an apportioned figure. The identified contracts are those for which the descriptive information available clearly states a single type of construction. Those contracts that cover more than a single type are called "combination" contracts. These combination contracts are then apportioned to the sewage treatment works, collecting sewers, and waterworks categories on the basis of known national experience in each of these.

B. METHOD OF DATA COLLECTION

The contract award data presented in this publication for the year 1968 result from the careful examination of over 100,000 contract notifications in the sewage and waterworks construction and related fields. All notifications of similar contracts awarded in the same geographical area are checked to reduce the chance of duplication. Certain contracts, primarily those covering sewage treatment plants, are checked and verified by the various State water pollution control agencies.

The data on which this report is based were obtained from:

1. F. W. Dodge Corporation daily reports on construction in the sewage and waterworks fields in the 38 Eastern States, Arizona and Southern California.

2. Various construction news periodicals such as *Construction News Bulletin, Pacific Architect and Builder, Rocky Mountain Construction, Southwest Builder and Contractor, Denver Daily Journal* and *Construction News Daily.*

Practically all of the information for the 38 Eastern States is obtained from daily reports of the F. W. Dodge Corp.

The data presented are composed of contracts awarded by municipalities, special districts, and other local governmental bodies. A few contracts are included for industries where the cost of such facilities can be readily identified, and where it is possible to ascertain that facilities are primarily for the disposal of sanitary wastes or for domestic waterworks facilities.

TABLE 1.—*Annual contract awards—sewage treatment works, collecting sewers, and waterworks—1952–68*

[Millions of dollars]

Year	Sewage treatment		Collecting sewers		Waterworks		Total	
	Actual	1957–59	Actual	1957–59	Actual	1957–59	Actual	1957–59
1952	147	178	225	286	227	304	589	777
1953	187	231	280	358	283	358	750	942
1954	229	276	244	294	293	353	766	923
1955	291	232	301	345	304	453	896	1,030
1956	454	385	305	331	341	485	1,100	1,201
1957	451	302	247	254	157	181	1,055	1,097
1958	389	385	340	340	389	389	1,118	1,114
1959	349	336	336	329	504	480	1,189	1,136
1960	459	439	459	439	645	597	1,363	1,275
1961	449	419	380	352	573	516	1,402	1,287
1962	545	505	320	291	507	441	1,373	1,237
1963	679	612	405	358	500	500	1,674	1,470
1964	544	459	396	344	654	532	1,594	1,335
1965	522	458	350	303	721	563	1,593	1,325
1966	553	469	399	330	819	611	1,771	1,410
1967	597	497	448	360	1,045	742	2,090	1,599
1968	807	694	582	439	913	602	2,302	1,735

NOTES:

1. Constant dollars on a 1957–59 base were computed as follows: Sewers from PHS Sewer Construction Cost Index (PHS Publication 1132); sewage treatment a composite 45 percent sewers (Publication 1132) and 55 percent PHS Sewage Treatment Plant Construction Cost Index (PHS Publication 1068); water from *Engineering News-Record* construction cost index changed to a 1957–59 base.

2. The Public Health Service sewage treatment data prior to 1957 are composed of identified contracts only. Beginning with 1957, the figures include an amount apportioned to sewage treatment works from the "combination" contracts.

3. Data on collecting sewers prior to 1957 are obtained by subtracting Public Health Service sewage treatment data from the U.S. Department of Commerce sewer data which includes sanitary and storm sewerage system as well as sewage treatment works. Beginning with 1957, the data for collecting sewers were assembled by the Public Health Service and do not include storm sewers.

4. The waterworks data prior to 1957 are based on records maintained by the U.S. Department of Commerce. Beginning with 1957, data were obtained by the Public Health Service.

TABLE 2.—*Monthly contract awards—sewage treatment works, collecting sewers, and waterworks—1968*

[Millions of dollars]

Month	Sewage treatment		Collecting sewers		Waterworks		Total	
	Actual	Cumulative	Actual	Cumulative	Actual	Cumulative	Actual	Cumulative
January	58.2	58.2	43.1	43.1	92.7	92.8	194.1	194.3
February	40.0	98.3	28.8	71.9	50.4	143.2	119.2	313.6
March	69.4	167.8	35.7	107.7	47.4	190.6	152.5	466.2
April	54.4	222.2	51.1	158.8	91.9	282.6	197.5	663.7
May	80.7	313.0	48.6	207.4	74.3	356.9	213.7	877.5
June	85.9	399.0	45.1	252.6	94.5	451.5	225.6	1,103.1
July	99.0	498.0	57.2	309.8	78.4	529.9	234.8	1,337.9
August	114.1	612.2	44.9	354.8	95.7	625.7	254.7	1,592.7
September	90.4	702.6	62.6	417.5	57.4	683.1	210.5	1,803.2
October	64.4	767.0	52.6	470.1	104.0	787.2	221.1	2,024.4
November	41.0	808.0	50.5	520.7	46.4	833.7	147.1	2,171.5
December	58.8	866.8	32.8	582.5	79.4	913.1	191.0	2,362.5

TABLE 3.—*1968 contract awards by States*

State	Total		Sewage treatment		Sewers		Water		Combinations	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Alabama	145	31,641,807	20	7,228,984	27	6,307,501	85	15,054,367	13	3,051,042
Alaska	17	8,860,137	2	1,017,919	2	1,349,810	11	2,277,835	2	1,214,813
Arizona	111	11,171,087	7	3,156,023	33	2,878,027	68	4,840,180	3	300,457
Arkansas	117	16,840,965	20	7,220,839	9	1,539,222	71	6,066,854	11	2,014,050
California	980	266,277,800	117	83,146,571	394	41,117,153	126	183,881,172	13	8,132,604
Colorado	130	24,595,147	18	6,883,339	20	3,115,733	19	12,626,431	13	1,969,644
Connecticut	198	45,511,481	18	9,568,833	133	21,898,938	10	12,567,998	7	1,505,715
Delaware	25	3,141,332	7	1,930,597	7	283,179	7	571,853	4	355,423
District of Columbia	28	8,203,601	5	6,063,067	5	1,180,276	14	758,019	5	202,332
Florida	331	69,731,895	50	19,101,011	111	14,175,190	132	18,162,212	35	17,990,152
Georgia	171	21,062,837	24	5,380,222	38	3,178,192	93	9,119,450	16	3,161,773
Hawaii	4	2,539,301	4	2,539,301	-	-	-	-	-	-
Idaho	21	2,131,915	7	1,015,067	2	254,647	10	641,566	2	190,635
Illinois	414	102,573,709	80	38,082,024	101	15,572,352	195	10,931,983	38	7,387,341
Indiana	324	71,660,251	61	24,930,874	123	18,808,235	133	18,015,921	7	9,905,218
Iowa	327	38,708,008	112	14,716,965	112	10,087,691	80	12,205,623	13	1,698,326
Kansas	244	33,568,072	33	10,825,265	117	8,965,661	86	11,398,109	8	2,379,037
Kentucky	190	45,417,909	33	8,250,503	35	6,573,271	113	28,660,576	9	1,924,559
Louisiana	268	28,072,074	29	5,745,930	38	5,793,786	139	13,943,109	30	2,591,849
Maine	28	6,158,623	9	4,214,271	10	1,001,811	9	939,541	-	-
Maryland	613	81,561,007	70	27,271,581	127	11,556,291	95	27,376,242	321	14,756,893
Michigan	242	46,143,079	29	17,937,671	106	11,721,386	85	7,345,953	22	6,435,666
Minnesota	475	102,920,533	38	35,709,276	192	47,896,186	173	56,969,574	72	22,345,497
Mississippi	346	41,070,001	19	15,513,932	70	7,518,738	112	6,991,113	115	11,016,218
Missouri	326	30,263,805	27	4,666,163	15	3,776,129	266	17,670,799	18	4,150,504
Montana	310	55,073,047	57	25,555,438	85	7,376,057	147	16,582,089	21	5,559,463
Nebraska	25	3,060,922	10	1,843,157	5	101,633	9	749,837	1	63,295
Nevada	205	11,883,080	30	2,251,325	76	3,636,505	78	1,929,638	21	1,066,221
New Hampshire	22	3,301,666	4	194,822	4	104,989	11	2,761,855	-	-
New Jersey	30	9,987,109	16	7,164,380	6	1,672,116	6	373,628	2	635,335
New Mexico	365	80,913,017	18	18,824,110	175	41,364,547	121	12,547,230	18	5,207,130
New York	27	7,103,847	3	883,771	3	730,110	16	3,389,830	5	2,099,806
North Carolina	723	220,678,650	96	130,405,569	218	39,236,601	315	11,931,018	31	9,105,438
North Dakota	233	50,766,330	18	15,190,110	44	4,141,199	109	26,233,538	32	5,201,453
Ohio	72	2,667,969	26	648,665	10	317,295	22	553,110	14	1,148,569
Oklahoma	543	105,117,788	72	37,927,791	188	22,871,139	253	10,882,347	30	3,433,516
Oregon	182	24,917,422	38	8,589,062	25	1,202,240	107	13,780,921	12	1,345,199
Pennsylvania	151	21,740,806	19	6,113,818	66	5,831,901	65	9,594,073	1	200,981
Puerto Rico	672	166,080,836	115	71,414,059	277	54,882,555	251	35,591,380	29	4,192,833
Rhode Island	-	-	-	-	-	-	-	-	-	-
South Carolina	32	11,418,563	1	1,700,405	9	3,501,661	18	8,092,883	1	1,117,614
South Dakota	130	40,055,502	33	25,385,331	22	5,371,307	55	7,190,913	10	2,107,918
Tennessee	51	3,779,987	20	712,500	9	302,379	19	2,620,573	3	84,635
Texas	300	53,508,039	31	20,946,173	50	11,802,896	90	15,776,387	20	4,802,583
Utah	865	119,725,788	98	22,080,202	150	16,277,858	183	67,470,675	134	13,296,053
Vermont	18	2,302,683	13	1,607,546	1	318,898	3	352,621	1	23,618
Virginia	17	3,328,298	5	1,404,191	3	530,652	8	1,390,185	1	26,937
Virgin Islands	216	35,067,549	29	10,235,452	107	14,917,672	62	8,686,357	18	1,228,068
Washington	-	-	-	-	-	-	-	-	-	-
West Virginia	290	37,962,755	36	9,958,083	99	10,191,109	143	14,452,255	12	3,417,408
Wisconsin	53	13,561,783	7	3,536,470	3	1,531,037	38	5,637,361	5	2,856,915
Wyoming	661	72,633,562	58	22,379,547	270	25,167,001	179	13,730,249	157	11,056,765
	30	2,524,218	5	243,241	7	311,738	5	1,328,669	3	640,567
Total	12,180	2,362,501,710	1,820	773,878,526	3,801	517,615,218	5,163	866,529,241	1,396	204,481,695

TABLE 4.—*1968 contract awards (distributed) by States*

State	Total	Sewage Treatment	Sewers	Water
Alabama	31,641,897	8,616,192	7,276,197	15,749,501
Alaska	8,860,437	4,570,208	1,735,517	2,554,718
Arizona	11,174,687	3,292,630	2,973,420	4,908,634
Arkansas	16,840,965	8,136,561	2,178,674	6,525,725
California	266,277,800	46,844,197	33,699,522	185,734,063
Colorado	24,595,147	7,642,471	3,945,838	13,006,834
Connecticut	45,541,484	10,253,431	22,376,996	12,911,052
Delaware	3,141,332	2,092,196	396,324	652,810
District of Columbia	8,293,694	6,195,980	1,273,090	824,622
Florida	69,731,805	27,283,569	19,887,291	22,560,998
Georgia	21,062,837	6,739,139	4,183,294	9,840,396
Hawaii	2,539,304	2,539,304		
Idaho	2,131,915	1,131,742	315,172	684,999
Illinois	102,573,760	42,040,804	17,917,803	42,615,077
Indiana	71,660,251	29,434,449	21,953,102	20,272,679
Iowa	38,708,608	15,489,137	10,626,905	12,592,561
Kansas	33,568,072	11,906,934	9,720,993	11,940,133
Kentucky	45,417,909	9,134,535	7,184,312	29,099,057
Louisiana	28,072,674	6,922,358	6,616,687	14,533,622
Maine	6,158,623	4,214,271	1,004,811	939,541
Maryland	81,561,007	33,981,053	16,241,545	31,338,378
Massachusetts	46,443,679	20,893,758	16,767,684	8,812,222
Michigan	162,920,533	45,809,036	54,960,791	62,060,660
Minnesota	41,070,001	20,522,642	11,046,343	9,500,993
Mississippi	30,263,895	6,553,560	5,093,897	18,616,429
Missouri	55,073,647	28,083,142	9,141,164	17,849,329
Montana	3,060,922	1,871,935	424,728	764,257
Nebraska	11,883,689	2,736,100	3,975,025	5,172,560
Nevada	3,361,666	194,822	104,989	2,761,855
New Hampshire	9,987,469	7,453,255	1,813,832	720,379
New Jersey	80,913,017	21,191,650	16,017,789	43,703,566
New Mexico	7,103,847	1,838,183	1,397,120	3,868,239
New York	230,678,650	134,545,511	42,127,544	44,005,585
North Carolina	50,766,330	17,555,069	5,792,639	27,418,611
North Dakota	2,667,969	1,170,881	681,964	815,124
Ohio	105,117,788	39,188,902	25,964,266	41,664,612
Oklahoma	24,917,422	9,200,679	1,629,335	14,087,404
Oregon	21,740,806	6,205,227	5,895,711	9,639,863
Pennsylvania	166,080,836	73,320,401	56,231,762	36,546,663
Puerto Rico				
Rhode Island	14,448,563	2,228,187	3,866,023	8,354,349
South Carolina	40,055,502	26,343,734	6,040,562	7,671,200
South Dakota	3,779,987	750,980	389,150	2,639,855
Tennessee	54,508,039	23,170,649	13,146,271	16,891,088
Texas	119,725,488	28,725,751	20,499,492	70,500,117
Utah	2,302,683	1,618,284	326,396	358,002
Vermont	4,328,268	1,476,141	545,504	1,306,622
Virginia	55,067,549	10,793,813	15,307,578	8,966,154
Virgin Islands				
Washington	37,962,755	11,552,465	11,279,422	15,130,869
West Virginia	13,561,783	4,815,414	2,438,086	6,288,266
Wisconsin	72,633,752	27,406,683	28,977,479	16,249,367
Wyoming	2,521,218	520,848	535,560	1,467,777
Total	2,362,504,710	866,849,604	582,537,368	913,117,327

SECTION II—CONTRACT AWARDS—BASIC DATA—1968

This section presents the basic data as compiled; combination projects have not been apportioned. Tables of contract awards by population size groups, contract size groups, drainage basins and States are included.

The population size group tables do not refer to the population served. They represent the size of the community in which each contract was awarded. The population size groups of some contracts were unknown; these contracts consist primarily of new towns or administrative districts. The cumulative percentages shown in these tables are based on the known population groups.

A. SEWAGE TREATMENT WORKS CONSTRUCTION

The sewage treatment works are presented in two categories, namely, NEW PLANT and OTHER. The "NEW PLANT" classification includes stabilization ponds and appurtenances. The "OTHER" category includes replacements and additions to existing treatment plants, interceptors, and outfalls. This category also includes contracts whose costs cannot be separated between "New Plant" and "Other." Therefore, the "Other" classification may include a few new plants.

In 1968 the level of contracts awarded for construction of sewage treatment works in the United States reached a level of $866.8 million. Of this amount $773.9 million covered contracts identified as to specific location and type of construction. The following Tables 5 through 8 inclusive relate only to contracts individually identified for sewage treatment facilities.

Lists of the locations of contract awards for sewage treatment works are available upon request. Write to Director, Division of Pollution Surveillance, Federal Water Pollution Control Administration, U.S. Department of the Interior, Washington, D.C. 20242.

TABLE 5.—*Contract awards—sewage treatment works construction—1968—by population size groups*

Population size group	Total		Cumulative percent[2]		New Plant		Cumulative percent[2]		Other[1]		Cumulative percent[2]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Unknown population size	9	773,914	.	.	3	242,093	.	.	6	531,821	.	.
Under 500	201	18,809,201	11.5	2.5	31	3,819,509	11.5	2.1	170	14,989,692	11.5	2.6
500–1,000	165	23,943,284	20.6	5.6	33	5,994,472	22.7	5.2	132	17,948,812	20.2	5.7
1,000–2,500	281	50,053,417	36.6	12.0	59	15,707,189	42.7	13.3	222	34,346,228	34.8	11.6
2,500–5,000	212	65,365,702	47.7	20.5	34	10,108,454	54.2	21.5	178	49,257,248	46.4	20.1
5,000–10,000	183	76,599,411	57.7	30.4	43	34,373,389	68.8	39.2	140	42,226,022	55.6	27.4
10,000–25,000	208	111,723,306	69.2	44.8	35	29,454,422	80.7	54.4	173	82,268,884	67.0	41.6
25,000–50,000	132	91,002,417	76.4	56.6	17	23,813,856	86.4	66.6	115	67,188,561	74.5	53.2
50,000–100,000	110	65,600,734	82.5	65.1	6	6,401,461	88.5	69.9	104	59,199,273	81.3	63.4
100,000–250,000	93	86,776,606	87.6	76.3	11	31,162,086	92.2	86.0	82	55,614,520	86.7	73.0
250,000 and over	226	183,630,541	100.0	100.0	23	27,265,576	100.0	100.0	203	156,364,958	100.0	100.0
Total	1,820	773,878,526	.	.	295	194,342,507	.	.	1,525	579,536,019	.	.

[1] Interceptors, outfalls, enlargements and alterations to plants.

[2] Cumulative percentages based on the known population groups.

TABLE 6.—*Contract awards—sewage treatment works construction—1968—by contract size groups*

Population size group	Total				New Plant				Other[1]			
	Number	Dollars	Cumulative percent[2]		Number	Dollars	Cumulative percent[2]		Number	Dollars	Cumulative percent[2]	
			Number	Dollars			Number	Dollars			Number	Dollars
Under 10,000	80	275,240	4.2	0.0	2	14,944	0.7	0.0	78	260,828	1.5	0.0
10,000–25,000	187	3,756,567	12.5	0.5	14	242,961	5.4	0.1	173	3,044,133	13.8	0.6
25,000–50,000	208	9,717,819	25.5	1.6	14	555,889	10.6	0.4	225	8,161,530	28.6	2.0
50,000–100,000	208	20,471,382	40.9	4.2	13	3,296,536	21.1	2.1	237	17,297,746	44.1	4.9
100,000–250,000	232	71,726,159	64.7	13.5	87	14,839,180	53.9	9.7	340	56,919,073	66.8	14.8
250,000–500,000	280	100,270,382	90.2	26.5	65	15,987,284	69.2	18.0	230	84,282,598	82.3	29.1
500,000–1,000,000	197	137,000,000	99.7	44.2	11	28,845,129	84.1	32.8	151	108,163,970	92.2	48.0
1,000,000–5,000,000	157	201,910,910	99.4	85.3	16	89,398,987	98.6	78.8	111	215,518,252	99.5	84.8
Over 5,000,000	12	129,150,160	100.0	100.0	1	11,202,980	100.0	100.0	8	87,947,180	100.0	100.0
Total	1,850	774,878,520			295	194,342,507			1,525	579,536,019		

[1] Interceptors, outfalls, enlargements and alterations to plants.

TABLE 7.—*Contract awards—sewage treatment works construction—1968—by drainage basin*

Drainage basin	Total		New plants		Other[1]	
	Number	Dollars	Number	Dollars	Number	Dollars
Northeast	290	182,215,196	13	53,996,778	177	128,218,718
North Atlantic	191	100,140,568	28	33,016,433	163	67,124,135
Southeast	185	73,726,583	30	22,278,141	155	51,448,139
Tennessee River	25	13,381,529	9	2,536,808	16	10,844,158
Ohio River	199	87,143,005	52	26,065,254	147	61,077,751
Lake Erie	33	9,505,387	9	8,487,247	24	11,018,140
Upper Mississippi	204	81,756,750	16	21,270,875	215	60,479,880
Western Great Lakes	65	47,160,110	5	2,102,735	60	45,457,375
Missouri River	192	85,164,655	15	5,721,245	177	80,243,410
Southwest-Lower Mississippi	133	80,163,372	17	4,454,086	116	25,879,286
Colorado River	21	5,563,628	3	2,392,390	18	3,171,238
Western Gulf	100	22,544,959	23	7,847,256	77	14,697,692
Pacific Northwest	65	17,293,274	7	1,981,079	58	15,282,198
California	100	38,803,796	5	1,969,922	95	37,133,874
Great Basin	33	6,431,164	2	291,348	31	6,139,816
Alaska	2	4,017,949	1	121,550	1	3,896,399
Hawaii	3	2,576,301			3	2,576,301
Puerto Rico						
Total	1,850	774,878,520	295	194,342,507	1,525	579,536,019

[1] Interceptors, outfalls, enlargements and alterations to plants.

TABLE 8.—*Contract awards—sewage treatment works construction—1968—by States*

State	Total		New plants		Other[1]	
	Number	Dollars	Number	Dollars	Number	Dollars
Alabama	20	7,228,984	3	1,578,795	17	5,650,189
Alaska	2	1,017,949	1	124,550	1	893,399
Arizona	7	3,156,023	1	1,900,141	6	1,255,882
Arkansas	20	7,220,839	1	263,024	19	6,957,815
California	117	13,146,571	6	1,754,060	111	41,392,511
Colorado	18	6,883,339	6	709,252	12	6,174,087
Connecticut	18	9,588,833	1	3,457,000	17	6,111,833
Delaware	7	1,930,597	1	238,000	6	1,692,597
District of Columbia	5	6,063,067	-	-	5	6,063,067
Florida	50	19,104,041	10	5,873,656	40	13,230,385
Georgia	24	5,300,222	5	1,423,833	19	3,876,389
Hawaii	4	2,539,304	-	-	4	2,539,304
Idaho	7	1,045,067	-	-	7	1,045,067
Illinois	80	38,682,024	14	5,531,779	66	33,150,245
Indiana	61	24,930,871	18	6,140,605	43	18,790,269
Iowa	112	14,716,965	13	7,114,902	99	7,602,063
Kansas	33	10,825,295	6	224,151	27	10,601,114
Kentucky	33	8,759,583	10	1,892,565	23	6,866,938
Louisiana	29	5,743,930	2	228,137	27	5,515,793
Maine	9	4,214,271	1	1,050,000	8	3,164,271
Maryland	70	27,271,481	6	5,680,036	64	21,591,545
Massachusetts	29	17,937,674	4	6,262,911	25	11,674,763
Michigan	38	35,709,276	1	715,733	37	34,993,543
Minnesota	49	15,513,952	10	2,362,009	39	13,151,923
Mississippi	27	4,666,463	1	876,977	26	3,789,486
Missouri	57	25,555,438	4	3,083,201	53	22,472,237
Montana	10	1,843,157	1	1,269,728	9	573,429
Nebraska	30	2,251,325	5	674,530	25	1,576,795
Nevada	4	494,822	-	-	4	494,822
New Hampshire	16	7,164,390	4	3,077,618	12	4,086,772
New Jersey	48	18,824,140	6	5,535,041	42	13,289,099
New Mexico	3	883,771	-	-	3	883,771
New York	96	130,405,569	21	40,923,124	75	89,482,445
North Carolina	48	15,190,140	10	5,477,750	38	9,712,390
North Dakota	26	648,665	-	-	26	648,665
Ohio	72	37,927,796	16	12,879,716	56	25,048,080
Oklahoma	38	8,589,062	5	2,535,926	33	6,053,136
Oregon	19	6,113,848	3	570,297	16	5,543,551
Pennsylvania	115	71,414,059	35	32,300,140	80	39,113,919
Puerto Rico	-	-	-	-	-	-
Rhode Island	4	1,706,105	-	-	4	1,706,405
South Carolina	33	25,385,334	4	7,856,875	29	17,528,459
South Dakota	20	712,500	1	19,600	19	692,900
Tennessee	31	20,946,173	9	2,637,432	22	18,308,741
Texas	98	22,680,202	26	8,962,199	72	13,718,003
Utah	13	1,607,546	1	207,210	12	1,400,336
Vermont	5	1,464,194	1	126,322	4	1,337,872
Virginia	29	10,235,452	5	1,998,007	24	8,237,445
Virgin Islands	-	-	-	-	-	-
Washington	36	9,998,683	4	1,410,779	32	8,587,904
West Virginia	7	3,536,470	1	200,000	6	3,336,470
Wisconsin	58	22,379,547	12	7,194,806	46	15,184,651
Wyoming	5	243,244	-	-	5	243,244
Total	1,820	773,878,526	295	194,342,507	1,525	579,536,019

[1] Interceptors, outfalls, enlargements and alterations to plants.

B. COLLECTING SEWER CONSTRUCTION

Collecting sewer construction for 1968 totaled $582.5 million. Tables 9, 10, and 11 analyze the contract award data which was specified as purely collecting sewers (i.e. $517.6 million), and do not reflect any portion of the combination projects. The tabulation of the collecting sewer contract awards by States appears in Table 3 of Section I.

The collecting sewer classification does *not* include storm sewers.

C. WATERWORKS CONSTRUCTION

The waterworks data are broken down into four categories, namely, SOURCE, TREATMENT, DISTRIBUTION, and MISCELLANEOUS. The "SOURCE" group includes contracts awarded for wells, surface source development, and transmission lines. The "TREATMENT" area includes contracts for plants and auxiliary facilities. The "DISTRIBUTION" category includes contracts for ground storage, elevated tanks, and distribution systems. The "MISCELLANEOUS" classification includes contracts for pumping facilities and for water systems in general. When it is not possible to code a contract that is known to pertain to water into source, treatment, or distribution then it is included in the totals for miscellaneous.

Contract awards for waterworks construction in 1968, including an apportioned amount from the combination contracts, totaled $913.1 million. The tables following refer only to contracts that pertain exclusively to waterworks (i.e., $866.5 million).

TABLE 9.—*Contract awards—collecting sewer construction—1968—by population size groups*

Population size group	Collecting sewers			
	Number	Dollars	Cumulative percent[1] Number	Cumulative percent[1] Dollars
Unknown population size	23	4,154,448	.....	.....
Under 500	139	13,979,883	3.6	2.7
500–1,000	105	20,223,341	6.4	6.6
1,000–2,500	266	42,042,185	13.4	14.8
2,500–5,000	314	53,029,213	21.8	25.1
5,000–10,000	422	64,445,585	32.9	37.7
10,000–25,000	653	95,173,852	50.2	56.2
25,000–50,000	422	55,772,486	61.4	67.1
50,000–100,000	336	41,047,988	70.3	75.1
100,000–250,000	306	42,342,474	78.4	83.3
250,000 and over	816	85,418,741	100.0	100.0
Total	3,802	517,630,196	.....	.....

[1] Cumulative percentages based on known population groups.

TABLE 10.—*Contract awards—collecting sewer construction—1968—by contract size groups*

Contract size group (dollars)	Collecting sewers			
	Number	Dollars	Cumulative percent Number	Cumulative percent Dollars
Under 10,000	633	3,668,540	16.6	0.7
10,000–25,000	809	13,465,175	37.9	3.3
25,000–50,000	639	23,062,750	54.7	7.8
50,000–100,000	593	42,524,447	70.3	16.0
100,000–250,000	609	96,882,789	86.3	34.7
250,000–500,000	288	101,277,378	93.9	54.3
500,000–1,000,000	158	108,701,465	98.1	75.3
1,000,000–5,000,000	72	121,086,417	100.0	98.7
Over 5,000,000	1	6,961,235	100.0	100.0
Total	3,802	517,630,196	.....	.....

TABLE 11.—*Contract awards—collecting sewer construction—1968—by drainage basin*

Drainage basin	Collecting sewers		Drainage basin	Collecting sewers	
	Number	Dollars		Number	Dollars
Northeast	652	117,718,735	Colorado River	48	5,396,163
North Atlantic	442	76,219,837	Western Gulf	147	16,667,160
Southeast	269	37,270,206	Pacific Northwest	169	16,324,079
Tennessee River	29	9,570,733	California	370	27,041,006
Ohio River	317	49,733,104	Great Basin	19	4,135,153
Lake Erie	117	12,887,552	Alaska	2	1,349,810
Upper Mississippi	387	38,652,650	Hawaii	1	34,254
Western Great Lakes	405	72,858,664	Puerto Rico	.....	.....
Missouri River	225	18,194,142			
Southwest-Lower Mississippi	203	13,576,939	Total	3,802	517,630,196

TABLE 12.—*Contract awards—waterworks construction—1968—by population size groups*

Population size group	Total		Source		Treatment		Distribution		Miscellaneous[1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Unknown population size	55	5,299,707	8	607,046	1	310,529	36	3,190,190	7	1,191,942
Under 500	504	33,922,915	124	3,865,897	31	3,333,862	270	17,710,558	76	9,012,598
500–1,000	332	27,550,497	63	3,323,263	26	2,376,556	201	16,136,932	42	5,713,746
1,000–2,500	588	46,980,206	126	6,553,236	44	9,570,941	353	24,723,076	65	6,132,953
2,500–5,000	513	72,500,203	91	14,510,852	44	11,088,837	321	34,509,346	57	12,391,168
5,000–10,000	579	79,133,109	117	12,538,137	39	18,297,430	362	37,382,322	61	10,915,220
10,000–25,000	833	124,955,797	190	32,615,340	66	26,748,358	505	53,567,356	72	12,024,743
25,000–50,000	517	107,675,259	113	36,355,275	22	17,556,158	339	38,190,085	43	15,573,741
50,000–100,000	316	59,382,071	74	14,565,916	17	13,993,005	203	28,201,248	22	2,621,902
100,000–250,000	259	61,068,316	59	23,650,453	11	11,339,157	165	19,178,325	24	6,900,381
250,000 and over	667	248,061,161	161	152,856,678	23	14,995,328	438	37,264,097	45	42,945,058
Total	5,163	866,529,241	1,126	301,442,093	330	129,610,161	3,193	310,053,535	514	125,423,452

[1] This includes separate contracts for pumping facilities and other waterworks contracts that cover more than one of the above divisions.

TABLE 12A.—*Contract awards—waterworks construction—1968—by population size groups—cumulative percentages*[1]

Population size group	Total		Source		Treatment		Distribution		Miscellaneous[1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Unknown population size										
Under 500	9.8	3.9	11.0	1.3	10.3	2.6	8.5	5.7	14.8	7.2
500–1,000	16.2	7.1	16.6	2.4	18.2	4.4	14.8	10.9	23.0	11.7
1,000–2,500	27.6	12.5	27.8	4.6	31.5	11.8	25.8	18.9	35.6	16.6
2,500–5,000	37.5	20.9	35.9	9.4	44.8	20.3	35.9	30.0	46.7	26.5
5,000–10,000	48.7	30.0	46.3	13.5	56.7	34.5	47.2	42.1	58.6	35.2
10,000–25,000	64.9	44.4	63.1	24.4	76.7	55.1	63.0	59.4	72.6	44.8
25,000–50,000	74.9	56.9	73.2	36.4	83.3	68.6	73.6	71.7	80.9	57 2
50,000–100,000	81.0	63.7	79.8	41.2	88.5	79.4	80.0	80.8	85.2	59.3
100,000–250,000	86.0	70.8	85.0	49.1	91.8	88 2	85.2	87.0	89.9	64.8
250,000 and over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Cumulative percentages based on known population groups.
[2] See Table 12

TABLE 13.—*Contract awards—waterworks construction—1968—by contract size groups*

Contract size group (dollars)	Total		Source		Treatment		Distribution		Miscellaneous[1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Under 10,000	557	3,162,298	167	1,003,890	6	33,367	349	1,921,855	35	203,186
10,000–25,000	1,047	17,757,157	278	4,097,646	32	567,812	665	11,230,129	72	1,261,570
25,000–50,000	1,099	39,574,887	222	7,833,532	61	2,252,909	722	26,189,844	94	3,298,492
50,000–100,000	964	69,341,276	164	11,755,392	53	3,875,574	633	45,371,879	114	8,338,431
100,000–250,000	853	134,110,357	133	21,924,179	68	11,869,750	547	83,816,767	105	16,499,661
250,000–500,000	340	118,111,805	72	25,480,940	41	14,799,497	180	61,598,663	47	16,232,705
500,000–1,000,000	189	132,274,216	46	34,113,291	41	29,676,225	78	51,034,813	24	17,449,887
1,000,000–5,000,000	99	192,878,968	34	69,125,036	25	49,773,652	19	28,889,585	21	44,790,695
Over 5,000,000	15	159,318,277	10	125,208,077	3	16,761,575			2	17,348,825
Total	5,163	866,529,241	1,126	301,442,093	330	129,610,161	3,193	310,053,535	514	125,423,452

[1] See Table 12

TABLE 13A.—*Contract awards—waterworks construction—1968—by contract size groups—cumulative percentages*

Contract size group (dollars)	Total		Source		Treatment		Distribution		Miscellaneous [1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Under 10,000	10.8	0.4	14.8	0.3	1.8	0.0	10.9	0.6	6.8	0.2
10,000–25,000	31.1	2.4	39.5	1.9	11.5	0.5	31.8	4.2	20.8	1.2
25,000–50,000	52.4	7.0	59.2	4.5	30.0	2.2	54.4	12.7	39.1	3.8
50,000–100,000	71.0	15.0	73.8	8.4	46.1	5.2	74.2	27.3	61.3	10.4
100,000–250,000	87.5	30.5	85.6	15.7	66.7	14.4	91.3	54.4	81.7	23.6
250,000–500,000	94.1	44.1	92.0	24.1	79.1	25.8	97.0	74.2	90.9	36.5
500,000–1,000,000	97.8	59.4	96.1	35.1	91.5	48.7	99.4	90.7	95.5	50.5
1,000,000–5,000,000	99.7	81.6	99.1	58.5	99.1	87.1	100.0	100.0	99.6	86.2
Over 5,000,000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] See Table 12

TABLE 14.—*Contract awards—waterworks construction—1968—by drainage basin*

Drainage basin	Total		Source		Treatment		Distribution		Miscellaneous [1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Northeast	588	79,715,106	123	20,379,511	18	14,126,587	393	35,226,246	54	9,982,762
North Atlantic	354	69,381,843	74	22,594,877	20	19,678,172	230	23,041,845	30	4,066,949
Southeast	646	83,424,065	151	16,130,753	54	15,340,277	382	42,302,196	59	9,650,839
Tennessee River	66	18,875,417	6	1,935,954	8	2,801,715	44	7,630,390	8	6,507,358
Ohio River	533	86,135,958	63	9,398,776	45	17,895,633	374	44,503,376	51	14,338,173
Lake Erie	113	20,135,197	16	2,652,337	9	1,942,787	80	9,390,096	8	6,149,977
Upper Mississippi	489	54,864,953	117	11,301,206	38	10,090,325	285	26,992,858	49	6,480,564
Western Great Lakes	302	74,687,777	51	30,940,706	16	12,721,755	202	18,464,701	33	6,560,615
Missouri River	303	30,886,473	75	6,809,185	28	6,976,122	165	11,860,383	35	5,240,783
Southwest-Lower Mississippi	550	62,683,341	125	16,558,398	54	10,693,973	312	27,486,428	59	7,944,545
Colorado River	108	36,260,823	34	29,908,471	5	1,614,115	58	3,749,399	11	988,838
Western Gulf	467	63,808,681	138	23,834,035	21	9,999,096	267	24,162,096	41	5,873,454
Pacific Northwest	216	24,738,653	37	7,724,518	5	1,141,645	135	10,511,253	39	5,361,237
California	385	139,744,910	101	77,491,273	9	4,587,959	240	21,876,673	35	35,789,005
Great Basin	32	18,848,206	11	16,709,600	...	.....	20	2,164,253	1	34,353
Alaska	11	2,277,835	4	1,072,193	...	.....	6	751,342	1	454,000
Hawaii										
Puerto Rico										
Total	5,163	866,529,241	1,126	301,442,093	330	129,610,161	3,193	310,053,535	514	125,423,452

[1] See Table 12

TABLE 15.—*Contract awards—waterworks construction—1968—by States*

State	Total		Source		Treatment		Distribution		Miscellaneous [1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Alabama	85	15,054,367	12	1,065,234	8	3,371,894	57	7,720,643	8	2,896,626
Alaska	11	2,277,835	4	1,072,493	...	...	6	751,342	1	454,000
Arizona	68	4,840,180	23	1,580,434	3	226,615	37	2,584,980	5	448,151
Arkansas	74	6,066,854	17	659,827	8	1,400,624	47	3,807,576	2	158,827
California	426	183,881,172	114	119,595,809	9	1,587,950	266	23,848,676	37	35,848,728
Colorado	49	12,626,431	16	4,321,369	4	2,287,901	14	1,184,655	15	4,832,506
Connecticut	40	12,567,998	7	5,031,262	1	3,784,301	23	1,739,947	9	2,012,588
Delaware	7	571,833	2	288,080	...	...	5	283,753	...	...
District of Columbia	13	758,019	2	262,587	...	...	10	363,411	1	132,021
Florida	132	18,462,212	33	6,871,697	16	3,089,682	67	5,386,479	16	2,504,354
Georgia	93	9,119,350	13	640,238	6	1,189,888	67	7,033,307	7	255,917
Hawaii	...	...	...	...	...	...	...	...	...	...
Idaho	10	641,566	...	...	3	134,964	4	181,942	3	324,660
Illinois	195	40,931,983	36	10,826,526	15	9,088,850	121	16,446,091	23	4,570,516
Indiana	133	18,015,924	15	435,325	12	6,926,831	94	8,174,138	12	2,479,630
Iowa	90	12,205,623	31	1,155,454	20	7,075,881	34	3,831,405	5	142,883
Kansas	86	11,398,106	14	2,572,805	11	4,305,296	50	3,400,380	11	1,119,625
Kentucky	113	28,660,576	12	1,926,014	12	4,092,768	79	15,346,972	10	7,294,822
Louisiana	149	13,943,109	39	3,279,341	13	2,549,94.	83	7,233,955	14	879,869
Maine	9	939,541	3	365,800	...	...	5	275,176	1	298,565
Maryland	95	27,976,242	26	13,256,947	2	5,720,974	60	7,730,391	7	1,267,930
Massachusetts	85	7,345,953	15	868,666	2	522,395	57	5,451,375	11	603,517
Michigan	173	56,969,571	27	31,316,363	8	3,831,483	121	13,873,020	17	4,948,708
Minnesota	112	6,991,113	31	1,332,320	5	949,639	63	4,152,547	13	556,607
Mississippi	266	17,670,799	75	2,093,758	21	807,197	144	12,671,743	26	2,098,101
Missouri	147	16,582,689	32	2,372,717	14	3,124,887	87	8,268,795	14	2,816,290
Montana	9	749,837	3	91,426	...	...	4	214,758	2	443,653
Nebraska	78	4,929,638	16	1,649,749	1	16,000	51	2,362,400	10	900,799
Nevada	14	2,761,855	6	2,391,929	...	...	7	268,926	1	101,000
New Hampshire	6	575,628	5	27,775	...	...	3	547,853	...	...
New Jersey	124	12,517,200	30	3,292,215	10	2,060,201	76	5,627,647	8	937,137
New Mexico	16	3,389,830	4	799,224	...	...	9	2,286,700	3	303,906
New York	345	41,931,048	71	9,743,008	9	7,842,646	237	20,929,858	28	3,425,536
North Carolina	109	26,233,538	25	5,069,948	8	6,250,677	64	10,772,510	12	4,140,403
North Dakota	22	553,440	7	117,930	...	...	12	251,949	3	183,561
Ohio	253	40,882,337	35	3,595,128	23	7,994,355	175	19,796,975	20	9,495,879
Oklahoma	107	13,780,921	21	3,804,778	9	2,166,985	68	6,928,001	9	881,157
Oregon	65	9,594,073	20	4,056,502	1	971,000	27	2,120,845	17	2,445,726
Pennsylvania	251	35,591,389	37	7,696,028	17	12,819,210	179	14,155,172	18	920,979
Puerto Rico	...	...	...	...	...	...	...	...	...	...
Rhode Island	18	8,092,883	5	1,963,322	...	...	12	2,946,231	1	3,183,330
South Carolina	55	7,190,943	14	1,102,830	3	1,276,185	34	3,698,161	4	1,113,767
South Dakota	19	2,620,573	3	51,541	6	897,500	8	1,598,453	2	73,079
Tennessee	90	15,776,387	11	1,711,246	11	1,973,255	60	8,180,663	8	3,911,223
Texas	483	67,470,675	144	27,644,054	22	10,126,516	272	23,034,147	45	6,665,958
Utah	3	352,621	...	...	...	...	2	313,603	1	39,018
Vermont	8	1,300,485	1	31,750	1	460,138	6	808,597	...	...
Virginia	62	8,686,357	9	1,928,453	5	1,429,708	38	4,096,049	10	1,232,147
Virgin Islands	...	...	...	...	...	...	...	...	...	...
Washington	143	14,352,255	18	3,668,257	1	35,681	107	8,501,119	17	2,147,198
West Virginia	38	5,637,361	3	497,424	3	686,150	23	2,238,577	9	2,215,210
Wisconsin	179	13,730,249	40	3,355,090	6	2,166,304	116	6,514,130	17	1,694,725
Wyoming	5	1,328,669	1	921,417	1	107,090	2	217,542	1	22,620
Total	5,163	866,529,241	1,126	301,442,093	330	129,610,161	3,193	310,053,535	514	125,423,452

[1] See Table 12

D. COMBINATION CONSTRUCTION

Combination contracts are made up of projects that cover more than one of the three major categories: (1) Sewage treatment; (2) collecting sewers; and (3) waterworks. The combination contract awards by States appear in Table 3 of Section I.

TABLE 16.—*Contract awards—combination construction—1968—by population size groups*

Population size group	Combinations[1]		Cumulative percent[2]	
	Number	Dollars	Number	Dollars
Unknown population size	15	1,297,197		
Under 500	77	9,937,845	5.5	4.8
500–1,000	76	10,311,763	11.0	9.9
1,000–2,500	139	20,722,774	21.1	20.1
2,500–5,000	101	9,915,154	28.4	25.0
5,000–10,000	130	22,140,658	37.8	35.9
10,000–25,000	157	37,594,168	49.2	54.1
25,000–50,000	117	20,289,950	57.7	64.4
50,000–100,000	66	18,269,419	62.4	73.4
100,000–250,000	75	13,439,596	67.9	80.0
250,000 and over	443	40,563,231	100.0	100.0
Total	1,396	204,481,695		

[1] This table includes contracts whose descriptive information covers more than one single category of construction (e.g., sewage treatment, sewers or waterworks).

[2] Cumulative percentages are based on known population groups.

TABLE 17.—*Contract awards—combination construction—1968—by contract size groups*

Contract size group (dollars)	Combinations[1]		Cumulative percent	
	Number	Dollars	Number	Dollars
Under 10,000	137	878,042	9.8	0.4
10,000–25,000	264	4,581,453	28.7	2.7
25,000–50,000	292	10,652,872	49.6	7.9
50,000–100,000	278	19,921,456	69.6	17.6
100,000–250,000	236	37,723,209	86.5	36.1
250,000–500,000	108	37,776,211	94.2	54.5
500,000–1,000,000	62	42,495,820	98.6	75.3
1,000,000–5,000,000	16	31,091,828	99.8	90.5
Over 5,000,000	3	19,360,804	100.0	100.0
Total	1,396	204,481,695		

[1] See Table 16

TABLE 18.—*Contract awards—combination construction—1968—by drainage basin*

Drainage basin	Combinations[1]		Drainage basin	Combinations[1]	
	Number	Dollars		Number	Dollars
Northeast	75	21,050,318	Colorado River	6	613,550
North Atlantic	378	23,980,303	Western Gulf	141	15,892,824
Southeast	117	34,129,101	Pacific Northwest	18	3,342,371
Tennessee River	7	2,176,393	California	39	7,385,054
Ohio River	46	11,354,007	Great Basin	4	767,918
Lake Erie	12	1,369,376	Alaska	2	1,214,843
Upper Mississippi	242	35,509,889	Hawaii		
Western Great Lakes	165	26,801,136	Puerto Rico		
Missouri River	61	6,899,042			
Southwest-Lower Mississippi	83	11,995,570	Total	1,396	204,481,695

[1] See Table 16

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